

|    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 5' | 11  | AGC | AAG | CAG | GTA | AAC | GAG | CTT | TGT | ACA | AAC | ACA | CAC | AGA | CCA | ACA | CAT | CCG | GGG | 56  |
|    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|    | 65  | ATG | GCT | GTG | TGT | TGC | TAG | AGC | AGA | GGC | TGA | TTA | AAC | ACT | CAG | TGT | GTT | GGC | TCT | 110 |
|    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|    | 119 | CTG | TGC | CAC | TCC | TGG | AAA | ATA | ATG | AAT | TGG | GTA | AGG | AAC | AGT | TAA | TAA | GAA | AAT | 164 |
|    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|    | 173 | GTG | CCT | TGC | TAA | CTG | TGC | ACA | TTA | CAA | CAA | AGA | GCT | GGC | AGC | TCC | TGA | AGG | AAA | 218 |
|    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|    | 227 | AGG | GCT | TGT | GCC | GCT | GCC | GTT | CAA | ACT | TGT | CAG | TCA | ACT | CAT | GCC | AGC | AGC | CTC | 272 |
|    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|    | 281 | AGC | GTC | TGC | CTC | CCC | AGC | ACA | CCC | TCA | TTA | CAT | GTG | TCT | GTC | TGG | CCT | GAT | CTG | 326 |
|    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|    | 335 | TGC | ATC | TGC | TCG | GAG | ACG | CTC | CTG | ACA | AGT | CGG | GAA | TTT | CTC | TAT | TTC | TCC | ACT | 380 |
|    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

FIGURE 1A

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 389 | GGT | GCA | AAG | AGC | GGA | TTT | CTC | CCT | GCT | TCT | CTT | CTG | 416 | TCA | CCC | CCG | 425 | CTC | CTC | 434 | TCC |
| 443 | CCC | AGG | AGG | CTC | CTT | GAT | TTA | TGG | TAG | CTT | TGG | ACT | 470 | TGC | TTC | CCC | 479 | GTC | TGA | 488 | CTG |
| 497 | TCC | TTG | ACT | TCT | AGA | ATG | GAA | GAA | GCT | GAG | CTG | GTG | 524 | AAG | GGA | AGA | 533 | CTC | CAG | 542 | GCC |
| 551 | ATC | ACA | GAT | AAA | AGA | AAA | ATA | CAG | GAA | GAA | ATC | TCA | 578 | CAG | AAG | CGT | 587 | CTG | AAA | 596 | ATA |
| 605 | I   | T   | D   | K   | R   | K   | I   | Q   | E   | E   | I   | S   | 632 | Q   | K   | R   | 641 | L   | K   | 650 | I   |
| 659 | GAG | GAA | GAC | AAA | CTA | AAG | CAC | CAG | CAT | TTG | AAG | AAA | 632 | AAG | GCC | TTG | 641 | AGG | GAG | 650 | AAA |
| 659 | E   | E   | D   | K   | L   | K   | H   | Q   | H   | L   | K   | K   | 632 | K   | A   | L   | 641 | R   | E   | 650 | K   |
| 659 | TTG | CTT | CTA | GAT | GGA | ATC | AGC | AGC | GGA | AAA | GAA | CAG | 686 | GAA | GAG | ATG | 695 | AAG | AAG | 704 | CAA |
| W   | L   | L   | L   | D   | G   | I   | S   | S   | G   | K   | E   | Q   | 686 | E   | E   | M   | 695 | K   | K   | 704 | Q   |

FIGURE 1B

U. S. Dept. of Health, Education, and Welfare  
 Public Health Service  
 National Institutes of Health  
 Bethesda, Maryland 20892

|   |     |      |      |      |      |
|---|-----|------|------|------|------|
| 713   | 722 | 731  | 740  | 749  | 758  |
| AAT CAA CAA GAC CAG CAC CAG ATC CAG GTT CTA GAA CAA AGT ATC CTC AGG CTT |     |      |      |      |      |
| N Q Q D Q H Q I Q V L E Q S I L R L                                     |     |      |      |      |      |
| 767   | 776 | 785  | 794  | 803  | 812  |
| GAG AAA GAG ATC CAA GAT CTT GAA AAA GCT GAA CTG CAA ATC TCA ACG AAG GAA |     |      |      |      |      |
| E K E I Q D L E K A E L Q I S T K E                                     |     |      |      |      |      |
| 821   | 830 | 839  | 848  | 857  | 866  |
| GAG GCC ATT TTA AAG AAA CTA AAG TCA ATT GAG CGG ACA ACA GAA GAC ATT ATA |     |      |      |      |      |
| E A I L K K L K S I E R T T E D I I                                     |     |      |      |      |      |
| 875   | 884 | 893  | 902  | 911  | 920  |
| AGA TCT GTG AAA GTG GAA AGA GAA GAA AGA GCA GAA GAG TCA ATT GAG GAC ATC |     |      |      |      |      |
| R S V K V E R E E R A E E S I E D I                                     |     |      |      |      |      |
| 929   | 938 | 947  | 956  | 965  | 974  |
| TAT GCT AAT ATC CCT GAC CTT CCA AAG TCC TAC ATA CCT TCT AGG TTA AGG AAG |     |      |      |      |      |
| Y A N I P D L P K S Y I P S R L R K                                     |     |      |      |      |      |
| 983   | 992 | 1001 | 1010 | 1019 | 1028 |
| GAG ATA AAT GAA GAA AAA GAA GAT GAT GAA CAA AAT AGG AAA GCT TTA TAT GCC |     |      |      |      |      |
| E I N E E K E D D E Q N R K A L Y A                                     |     |      |      |      |      |

FIGURE 1C

1037 1046 1055 1064 1073 1082  
 ATG GAA ATT AAA GTT GAA AAA GAC TTG AAG ACT GGA GAA AGT ACA GTT CTG TCT  
 M E I K V E K D L K T G E S T V L S  
 1091 1100 1109 1118 1127 1136  
 TCA ATA CCT CTG CCA TCA GAT GAC TTT AAA GGT ACA GGA ATA AAA GTT TAT GAT  
 S I P L P S D D F K G T G I K V Y D  
 1145 1154 1163 1172 1181 1190  
 GAT GGG CAA AAG TCA GTG TAT GCA GTA AGT TCT AAT CAC AGT GCA GCA TAC AAT  
 D G Q K S V Y A V S S N H S A A Y N  
 1199 1208 1217 1226 1235 1244  
 GGC ACC GAT GGC CTG GCA CCA GTT GAA GTA GAG GAA CTT CTA AGA CAA GCC TCA  
 G T D G L A P V E V E E L L R Q A S  
 1253 1262 1271 1280 1289 1298  
 GAG AGA AAC TCT AAA TCC CCA ACA GAG TAT CAT GAG CCT GTA TAT GCC AAT CCC  
 E R N S K S P T E Y H E P V Y A N P  
 1307 1316 1325 1334 1343 1352  
 TTT TAC AGG CCT ACA ACC CCA CAG AGA GAA ACG GTG ACC CCT GGA CCA AAC TTT  
 F Y R P T T P Q R E T V T P G P N F

FIGURE 1D

|      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1361 | CAA | GAA | AGG | ATA | AAG | ATT | AAA | ACT | AAT | GGA | CTG | GGT | ATT | GGT | GTA | AAT | GAA | TCC |
|      | Q   | E   | R   | I   | K   | I   | K   | T   | N   | G   | L   | G   | I   | G   | V   | N   | E   | S   |
| 1415 | ATA | CAC | AAT | ATG | GGC | AAT | GGT | CTT | TCA | GAG | GAA | AGG | GGA | AAC | AAC | TTC | AAT | CAC |
|      | I   | H   | N   | M   | G   | N   | G   | L   | S   | E   | E   | R   | G   | N   | N   | F   | N   | H   |
| 1469 | ATC | AGT | CCC | ATT | CCG | CCA | GTG | CCT | CAT | CCC | CGA | TCA | GTG | ATT | CAA | CAA | GCA | GAA |
|      | I   | S   | P   | I   | P   | P   | V   | P   | H   | P   | R   | S   | V   | I   | Q   | Q   | A   | E   |
| 1523 | GAG | AAG | CTT | CAC | ACC | CCG | CAA | AAA | AGG | CTA | ATG | ACT | CCT | TGG | GAA | GAA | TCG | AAT |
|      | E   | K   | L   | H   | T   | P   | Q   | K   | R   | L   | M   | T   | P   | W   | E   | E   | S   | N   |
| 1577 | GTC | ATG | CAG | GAC | AAA | GAT | GCA | CCC | TCT | CCA | AAG | CCA | AGG | CTG | AGC | CCC | AGA | GAG |
|      | V   | M   | Q   | D   | K   | D   | A   | P   | S   | P   | K   | P   | R   | L   | S   | P   | R   | E   |
| 1631 | ACA | ATA | TTT | GGG | AAA | TCT | GAA | CAC | CAG | AAT | TCT | TCA | CCC | ACT | TGT | CAG | GAG | GAC |
|      | T   | I   | F   | G   | K   | S   | E   | H   | Q   | N   | S   | S   | P   | T   | C   | Q   | E   | D   |

FIGURE 1E

If it had said that it is  
 the same as the one that  
 you are looking at, it is  
 the same as the one that  
 you are looking at, it is

|      |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |     |     |      |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1685 | GAG | GAA | GAT | GTC | AGA | TAT | AAT | ATC | GTT | 1703 | CAT | TCC | CTG | CCT | CCA | GAC | ATA | AAT | GAT | 1730 |
|      | E   | E   | D   | V   | R   | Y   | N   | I   | V   |      | H   | S   | L   | P   | P   | D   | I   | N   | D   |      |
| 1739 | ACA | GAA | CCG | GTG | ACA | ATG | ATT | TTC | ATG | 1757 | GGG | TAT | CAG | CAG | GCA | GAA | GAC | AGT | GAA | 1784 |
|      | T   | E   | P   | V   | T   | M   | I   | F   | M   |      | G   | Y   | Q   | Q   | A   | E   | D   | S   | E   |      |
| 1793 | GAA | GAT | AAG | AAG | TTT | CTG | ACA | GGA | TAT | 1811 | GAT | GGG | ATC | ATC | CAT | GCT | GAG | CTG | GTT | 1838 |
|      | E   | D   | K   | K   | F   | L   | T   | G   | Y   |      | D   | G   | I   | I   | H   | A   | E   | L   | V   |      |
| 1847 | GTG | ATT | GAT | GAT | GAG | GAG | GAG | GAT | GAA | 1865 | GAA | GGA | GAA | GCA | GAG | AAA | CCG | TCC | TAC | 1892 |
|      | V   | I   | D   | D   | E   | E   | E   | E   | D   |      | E   | G   | E   | A   | E   | K   | P   | S   | Y   |      |
| 1901 | CAC | CCC | ATA | GCT | CCC | CAT | AGT | CAG | GTG | 1919 | TAC | CAG | CCA | GCC | AAA | CCA | ACA | CCA | CTT | 1946 |
|      | H   | P   | I   | A   | P   | H   | S   | Q   | V   |      | Y   | Q   | P   | A   | K   | P   | T   | P   | L   |      |
| 1955 | CCT | AGA | AAA | AGA | TCA | GAA | GCT | AGT | CCT | 1973 | CAT | GAA | AAC | ACA | AAT | CAT | AAA | TCC | CCC | 2000 |
|      | P   | R   | K   | R   | S   | E   | A   | S   | P   |      | H   | E   | N   | T   | N   | H   | K   | S   | P   |      |

FIGURE 1F

|   |      |      |      |      |      |
|---|------|------|------|------|------|
| 2009  | 2018 | 2027 | 2036 | 2045 | 2054 |
| CAC AAA AAT TCC ATA TCT CTG AAA GAG CAA GAA AGC TTA GGC AGC CCT GTC     |      |      |      |      |      |
| H K N S I S L K E Q E E S L G S P V                                     |      |      |      |      |      |
| 2063  | 2072 | 2081 | 2090 | 2099 | 2108 |
| CAC CAT TCC CCA TTT GAT GCT CAG ACA ACT GGA GAT GGG ACT GAG GAT CCA TCC |      |      |      |      |      |
| H H S P F D A Q T T G D G T E D P S                                     |      |      |      |      |      |
| 2117  | 2126 | 2135 | 2144 | 2153 | 2162 |
| TTA ACA GCT TTA AGG ATG AGA ATG GCA AAG CTG GGA AAA AAG GTG ATC TAA GAG |      |      |      |      |      |
| L T A L R M R M A K L G K K V I *                                       |      |      |      |      |      |
| 2171  | 2180 | 2189 | 2198 | 2207 | 2216 |
| TTG TAC CAC CTA TAT AAA CAT CCT TTG AAG AAG AAA CTA AGA AGC ATT TGC AAA |      |      |      |      |      |
| 2225  | 2234 | 2243 | 2252 | 2261 | 2270 |
| TTT CTC TTC TGG ATA TTT TGT TTA TTT TTT CTG AAG TCC AAA AAA TTA TCA TTA |      |      |      |      |      |
| 2279  | 2288 | 2297 | 2306 | 2315 | 2324 |
| CAG TGT ACC ATA TTA AGC CAT GTG AAT AAG TAG TAG TCA TTA TTT GTG AAA AAT |      |      |      |      |      |

FIGURE 1G

|   |      |      |      |      |      |
|---|------|------|------|------|------|
| 2333  | 2342 | 2351 | 2360 | 2369 | 2378 |
| TCC CAA AAA GCT GGG GAA AAC AAA TGT GTA ACT TTT CCA GTT ACT TGA CAC GAT |      |      |      |      |      |
| 2387  | 2396 | 2405 | 2414 | 2423 | 2432 |
| TCA GTG GGG GAA AAC CAG CAT TTT TTA TTC TAT TGA TAC CAA AGC ATT TCT AAT |      |      |      |      |      |
| 2441  | 2450 | 2459 | 2468 | 2477 |      |
| AAG AGC TTG TTA AAT TTA AGA ATA AAG TTA TTT AAA ATA AAA AAA A 3'        |      |      |      |      |      |

FIGURE 1H



|    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 5' | GTA | TCC | CTT | GTT | TAA | TCA | CTT | TTG | TGG | TTA | AAA | GAG | ACC | TTT | GGG | TCA | GTC | TGC | 56  |
|    | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|    | 11  |     |     |     | 20  |     | 29  |     | 38  |     |     |     |     |     | 47  |     |     |     |     |
|    | CTC | ATT | CCT | TGA | AGA | GTT | TAG | CCC | TGG | CTC | ACT | TTT | CAC | TCT | ATT | TCT | TCT | CCT | 110 |
|    | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|    | 65  |     |     |     | 74  |     | 83  |     | 92  |     |     |     |     |     | 101 |     |     |     |     |
|    | GTC | TCA | AGA | AAG | AAG | AAA | AAA | AGA | GAC | AAA | TTA | CCC | AGA | AAC | CCC | TCC | CTT | CCC | 164 |
|    | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|    | 119 |     |     |     | 128 |     | 137 |     | 146 |     |     |     |     |     | 155 |     |     |     |     |
|    | CAC | ATG | GAG | GCC | TTG | GCA | AAT | GTT | AAT | TTT | CCT | AGA | AAA | TCC | TTC | AGA | CCT | GAA | 218 |
|    | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|    | M   | E   | A   | A   | L   | A   | N   | V   | N   | F   | P   | R   | K   | S   | F   | R   | P   | E   |     |
|    | 227 |     |     |     | 236 |     | 245 |     | 254 |     |     |     |     |     | 263 |     |     |     |     |
|    | GAC | GCA | GGA | AAA | GAA | TCT | GGC | TCT | CAG | GGT | GGC | TTC | TGC | GTC | CCC | GCC | GCC | AGG | 272 |
|    | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|    | D   | A   | G   | K   | E   | S   | G   | S   | Q   | G   | G   | F   | C   | V   | P   | A   | A   | R   |     |
|    | 281 |     |     |     | 290 |     | 299 |     | 308 |     |     |     |     |     | 317 |     |     |     |     |
|    | CCC | CAG | ACT | ATG | GTC | ACA | GGG | CCG | TCC | TGT | TCC | TCC | CCG | GGA | CTC | CAG | AAT | TTC | 326 |
|    | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|    | P   | Q   | T   | M   | V   | T   | G   | P   | S   | C   | S   | S   | P   | G   | L   | Q   | N   | F   |     |

FIGURE 2A

|   |   |             |             |     |     |
|---|---|-------------|-------------|-----|-----|
| 335   | 344                                     | 353         | 362         | 371 | 380 |
| TCT CCT   | CAA AGG AAA GAA AAC AGG GCA TGC GCT TGT | TGG CAA AAC | GCA GGG CCG |     |     |
| S P Q R K E N R A C A C W Q N A G P   |   |             |             |     |     |
| 389   | 398                                     | 407         | 416         | 425 | 434 |
| GCT CCC AAA AAC CCC ATG TGT GTA CGA TTA AAA GTT GGC CGT CCC                 |   |             |             |     |     |
| A P K N P M C V R L K V G R P Q A S   |   |             |             |     |     |
| 443   | 452                                     | 461         | 470         | 479 | 488 |
| CAG CGC AAA CTT AAA GAG ACA GGG CTT TGC TGA AAA CCA AAC ATG GGC CAG CTG     |   |             |             |     |     |
| Q R K L K E T G L C *   |   |             |             |     |     |
| 497   | 506                                     | 515         | 524         | 533 | 542 |
| GGC TTT TTA ACA ACC TAG AGA CTT TCC GGA GCT GCC TGG AAC AGA GCC TGC GGG     |   |             |             |     |     |
| 551   | 560                                     | 569         | 578         | 587 | 596 |
| AAA CGG GGC TTG CCA GAG ACA CTC ACA GTT TCC TGC TTC ATG GCC TGT TTT GGT CCC |   |             |             |     |     |
| 605   | 614                                     | 623         | 632         | 641 | 650 |
| CTA AGA ATC TCC ACA TCA TTG TCT TTC TTG TGC CTT TTC CTT GGT GAG CAA CAG     |   |             |             |     |     |
| 659   | 668                                     | 677         | 686         | 695 | 704 |
| AAA GGG AAG GGT TCC AAG CCT CTA AAA ATG TGC TTT GTG ATC AGG AGT GCG CTC     |   |             |             |     |     |

FIGURE 2B

|     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 713 | CAA  | ACC | AAA | TAC | GCG | CGC | TGC | CCT | TTC | GAG | GCC | AGT | GAG | CTC | AGC | CTC | CAA | GGC | 758 |
|     | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | 767  | TTT | AAA | GCC | ACA | TTT | CAG | CAA | GAG | AAA | GCG | CTG | AGA | GCT | CGC | AGG | TTC | ATT | AAA |
|     | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | 821  | GAA | GGC | AAA | GCA | CTG | GTG | TCT | CTC | CTT | AGA | AAA | GTA | GGT | TTC | TTG | GCT | TGA | TGT |
|     | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | 875  | AGA | CTG | GCT | TGC | TTT | GAT | TTT | TAG | TGA | AGG | GAA | TGT | ACG | TAA | AAC | AAA | ATA | GGG |
|     | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | 929  | CIT | GGC | TGG | TCA | AAG | GAG | ACA | AGC | AGG | ATG | GAT | GGA | TGG | ATG | GAT | GGA | TGG | ATG |
|     | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | 983  | TAT | GGA | TGA | ATA | GAT | AGA | TGG | TGT | TTG | CAT | GTA | AAT | TGC | AGA | GAA | AAC | AAA | ACC |
|     | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | 1037 | AAA | GCT | GAT | TGG | AAA | CAA | TTA | ATT | GTG | GGT | GTC | TGA | GGG | GGA | AGG | TCG | CAG | CTT |
|     | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

FIGURE 2C

|      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |     |     |     |      |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-----|-----|-----|------|
| 1091 | TGG | GCA | GCT | TTG | AGA | AGC | GGT | ACA | AGA | GTT | CTG | TGC | CTG | TGT | GTC | 1127 | 1118 | CAG | CCC | TGG | 1136 |
| 1145 | AGC | CAG | CCA | GTG | CAT | TTA | TTT | TAA | GCT | CTT | AGA | AGC | AAC | TCC | TTG | 1181 | 1172 | GCC | CAG | GAA | 1190 |
| 1199 | TGC | GTG | ACC | CCT | GAG | ATG | GGT | CCA | CGC | ATC | TCT | CTA | CAC | TTC | CTT | 1235 | 1226 | CTC | TCC | GTG | 1244 |
| 1253 | GGA | TAC | TGG | ACT | CGT | GCC | TCT | GCG | CCC | ATT | CTC | TTC | TCA | CGC | ATA | 1289 | 1280 | TCC | ATG | AGC | 1298 |
| 1307 | TTT | AAT | TTC | ACT | TTC | TGA | TCA | CGG | TAC | GTC | CAT | AAA | GCC | AGT | ATT | 1343 | 1334 | ACA | CTT | AAA | 1352 |
| 1361 | TGA | AGT | ATT | CTT | TTT | TGT | AAT | CGT | TTT | TTT | TAG | AAG | GTA | AAC | AAA | 1397 | 1388 | TTT | AAT | AAA | 1406 |
| 1415 | GCT | ACC | AAT | AAT | GAG | AAA | AAA | AAA | AAA | AAA | AAA | AAA | 3'  |     |     |      |      |     |     |     |      |

FIGURE 2D

| 5'  | 9   |     |     |     |     |     |     |     |     | 18  |     |     | 27  |     |     | 36  |     |     | 45  |     |     | 54  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAA | CCA | GGG | TCA | GGC | TGT | GCT | CAC | AGT | TTC | CTC | TGG | CGG | CAT | GTA | AAG | GCT | CCA | CAA | AGG | AGT | TGG | GAG | TTC | AAA | TGA | GGC | TGC | TGC | GGA | CGG | CCT | GAG | GAT | GGA | CCC | CAA | GCC | CTG | GAC | CTG | CCG | AGC | GTG | GCA | CTG | AGG | CAG | CGG | CTG | ACG | CTA | CTG | TGA | GGG | AAA | GAA | GGT | TGT | GAG | CAG | CCC | CGC | AGG | ACC | CCT | GGC | CAG | CCC | TGG | CCC | CAG | CCT | CTG | CCG | GAG | CCC | TCT | GTG | GAG | GCA | GAG | CCA | GTG | GAG | CCC | AGT | GAG | GCA | GGG | CTG | CTT | GGC | AGC | CAC | CGG | CCT | GCA | ACT | CAG | GAA | CCC | CTC | CAG | AGG | CCA | TGG | ACA | GGC | TGC | CCC | GCT | GAC | GGC | CAG | GGT | GAA | GCA | TGT | GAG | GAG | CCG | CCC | CGG | AGC | CAA |

FIGURE 3A

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 387 | GCA | GGA | GGG | AAG | AGG | CTT | TCA | TAG | ATT | CTA | TTC | ACA | AAG | AAT | AAC | CAC | CAT | TTT |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | 441 | AGG | ACC | ATG | AGG | CCA | CTG | TGC | GTG | ACA | TGC | TGG | TGG | CTC | GGA | CTG | CTG | GCT |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | M   | R   | P   | L   | C   | V   | T   | C   | W   | L   | G   | L   | L   | A   |     |     |     |     |
|     | 495 | ATG | GGA | GCT | GTT | GCA | GGC | CAG | GAG | GAC | GGT | TTT | GAG | GGC | ACT | GAG | GAG | GGC |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | A   | M   | G   | A   | V   | A   | G   | Q   | E   | D   | G   | F   | E   | G   | T   | E   | E   | G   |
|     | 549 | CCA | AGA | GAG | TTC | ATT | TAC | CTA | AAC | AGG | TAC | AAG | CGG | GCG | GGC | GAG | TCC | CAG |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | S   | P   | R   | E   | F   | I   | Y   | L   | N   | R   | Y   | K   | R   | A   | G   | E   | S   | Q   |
|     | 603 | AAG | TGC | ACC | TAC | ACC | TTC | ATT | GTG | CCC | CAG | CAG | CGG | GTC | ACG | GGT | GCC | ATC |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | D   | K   | C   | T   | Y   | T   | F   | I   | V   | P   | Q   | Q   | R   | V   | T   | G   | A   | I   |
|     | 657 | GTC | AAC | TCC | AAG | GAG | CCT | GAG | GTG | CTT | CTG | GAG | AAC | CGA | GTG | CAT | AAG | CAG |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | C   | V   | N   | S   | K   | E   | P   | E   | V   | L   | L   | E   | N   | R   | V   | H   | K   | Q   |

FIGURE 3B

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 711 | GAG | CTA | GAG | CTG | CTC | AAC | AAT | GAG | CTG | CTC | AAG | CAG | AAG | CGG | CAG | ATC | GAG | ACG |
|     | E   | L   | E   | L   | L   | N   | N   | E   | L   | L   | K   | Q   | K   | R   | Q   | I   | E   | T   |
| 765 | CTG | CAG | CAG | CTG | GTG | GAG | GTG | GAC | GGC | GGC | ATT | GTG | AGC | GAG | GTG | AAG | CTG | CTG |
|     | L   | Q   | Q   | L   | V   | E   | V   | D   | G   | G   | I   | V   | S   | E   | V   | K   | L   | L   |
| 819 | CGC | AAG | GAG | AGC | CGC | AAC | ATG | AAC | TCG | CGG | GTC | ACG | CAG | CTC | TAC | ATG | CAG | CTC |
|     | R   | K   | E   | S   | R   | N   | M   | N   | S   | R   | V   | T   | Q   | L   | Y   | M   | Q   | L   |
| 873 | CTG | CAC | GAG | ATC | ATC | CGC | AAG | CGG | GAC | AAC | GCG | TTG | GAG | CTC | TCC | CAG | CTG | GAG |
|     | L   | H   | E   | I   | I   | R   | K   | R   | D   | N   | A   | L   | E   | L   | S   | Q   | L   | E   |
| 927 | AAC | AGG | ATC | CTG | AAC | CAG | ACA | GCC | GAC | ATG | CTG | CAG | CTG | GCC | AGC | AAG | TAC | AAG |
|     | N   | R   | I   | L   | N   | Q   | T   | A   | D   | M   | L   | Q   | L   | A   | S   | K   | Y   | K   |
| 981 | GAC | CTG | GAG | CAC | AAG | TAC | CAG | CAC | CTG | GCC | ACA | CTG | GCC | CAC | AAC | CAA | TCA | GAG |
|     | D   | L   | E   | H   | K   | Y   | Q   | H   | L   | A   | T   | L   | A   | H   | N   | Q   | S   | E   |

FIGURE 3C

|      |     |     |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1035 | ATC | ATC | GCG | CAG | CTT | GAG | GAG | CAC | TGC | CAG  | AGG | GTG | CCC | TCG | GCC | AGG | CCC | GTC |
| I    | I   | A   | Q   | L   | E   | E   | H   | C   | Q   | R    | V   | P   | S   | A   | R   | P   | V   |     |
| 1089 | CCC | CAG | CCA | CCC | CCC | GCT | GCC | CCG | CCC | 1107 | CGG | GTG | TAC | CAA | CCA | CCC | ACC | TAC |
| P    | Q   | P   | P   | P   | A   | A   | P   | P   | P   | R    | V   | Y   | Q   | P   | P   | T   | Y   | N   |
| 1143 | CGC | ATC | ATC | AAC | CAG | ATC | TCT | ACC | AAC | 1161 | GAG | ATC | CAG | AGT | GAC | CAG | AAC | CTG |
| R    | I   | I   | N   | Q   | I   | I   | S   | T   | N   | E    | I   | Q   | S   | D   | Q   | N   | L   | K   |
| 1197 | GTG | CTG | CCA | CCC | CCT | CTG | CCC | ACT | ATG | 1215 | CCC | ACT | CTC | ACC | AGC | CTC | CCA | TCT |
| V    | L   | P   | P   | P   | L   | L   | P   | T   | M   | P    | T   | L   | T   | S   | L   | P   | S   | S   |
| 1251 | ACC | GAC | AAG | CCG | TCG | GGC | CCA | TGG | AGA | 1269 | GAC | TGC | CTG | CAG | GCC | CTG | GAG | GAT |
| T    | D   | K   | P   | P   | S   | G   | P   | W   | R   | D    | C   | L   | Q   | A   | L   | E   | D   | G   |
| 1305 | CAC | GAC | ACC | AGC | TCC | ATC | TAC | CTG | GTG | 1323 | AAG | CCG | GAG | AAC | ACC | AAC | CGC | CTC |
| H    | D   | T   | S   | S   | I   | I   | Y   | L   | V   | K    | P   | E   | N   | T   | N   | R   | L   | M   |

FIGURE 3D



[illegible]

FIGURE 3E

|   |      |      |      |      |      |
|---|------|------|------|------|------|
| 1683  | 1692 | 1701 | 1710 | 1719 | 1728 |
| AAC GGC AAG CAG TTC ACC ACC CTG GAC AGA GAT CAT GAT GTC TAC ACA GGA AAC     |      |      |      |      |      |
| N G K Q F T T L D R D H D V Y T G N   |      |      |      |      |      |
| 1737  | 1746 | 1755 | 1764 | 1773 | 1782 |
| TGT GCC CAC TAC CAG AAG GGA GGC TGG TGG TAT AAC GCC TGT GCC CAC TCC AAC     |      |      |      |      |      |
| C A H Y Q K G G W W Y N A C A H S N   |      |      |      |      |      |
| 1791  | 1800 | 1809 | 1818 | 1827 | 1836 |
| CTC AAC GGG GTC TGG TAC CGC GGC GGC CAT TAC CGG AGC CGC TAC TAC CAG GAC GGA |      |      |      |      |      |
| L N G V W Y R G G H Y R S R Y Q D G   |      |      |      |      |      |
| 1845  | 1854 | 1863 | 1872 | 1881 | 1890 |
| GTC TAC TGG GCT GAG TTC CGA GGA GGC TCT TAC TCA CTC AAG AAA GTG GTG ATG     |      |      |      |      |      |
| V Y W A E F R G G S Y S L K K V V M   |      |      |      |      |      |
| 1899  | 1908 | 1917 | 1926 | 1935 | 1944 |
| ATG ATC CGA CCG AAC CCC AAC ACC TTC CAC TAA GCC AGC TCC CCC TCC TGA CCT     |      |      |      |      |      |
| M I R P P N P N T F H *   |      |      |      |      |      |
| 1953  | 1962 | 1971 | 1980 | 1989 | 1998 |
| CTC GTG GCC ATT GCC AGG AGC CCA CCC TGG TCA CGC TGG CCA CAG CAC AAA GAA     |      |      |      |      |      |

FIGURE 3F

.....

|   |      |      |      |      |      |
|---|------|------|------|------|------|
| 2007  | 2016 | 2025 | 2034 | 2043 | 2052 |
| CAA CTC CTC ACC AGT TCA TCC TGA GGC TGG GAG GAC CGG GAT GCT GGA TTC TGT |      |      |      |      |      |
| 2061  | 2070 | 2079 | 2088 | 2097 | 2106 |
| TTT CCG AAG TCA CTG CAG CGG ATG ATG GAA CTG AAT CGA TAC GGT GTT TTC TGT |      |      |      |      |      |
| 2115  | 2124 | 2133 | 2142 | 2151 | 2160 |
| CCC TCC TAC TTT CCT TCA CAC CAG ACA GCC CCT CAT GTC TCC AGG ACA GGA CAG |      |      |      |      |      |
| 2169  | 2178 | 2187 | 2196 | 2205 | 2214 |
| GAC TAC AGA CAA CTC TTT CTT TAA ATA AAT TAA GTC TCT ACA ATA AAA ACA CAA |      |      |      |      |      |
| 2223  | 2232 | 2241 | 2250 | 2259 | 2268 |
| CTG CAA AGT ACC TTC ATA ATA TAC ATG TGT ATG AGC CTC CCT TGT GCA CGT ATG |      |      |      |      |      |
| 2277  | 2286 |      |      |      |      |
| TGT ATA GCA CAT ATA TAT GG 3'   |      |      |      |      |      |

FIGURE 3G

### NORTHERN ANALYSIS OF SEQ ID NO:3

| Category        | cDNAs   | Libraries | Abund | %Abund |
|-----------------|---------|-----------|-------|--------|
| Cardiovascular  | 270162  | 15/72     | 19    | 0.0070 |
| Connective      | 147886  | 15/54     | 26    | 0.0176 |
| Digestive       | 514430  | 33/151    | 54    | 0.0105 |
| Embryonic       | 107325  | 2/23      | 2     | 0.0019 |
| Endocrine       | 233587  | 7/63      | 8     | 0.0034 |
| Exocrine        | 255105  | 17/64     | 28    | 0.0110 |
| Female Reprod   | 445078  | 25/113    | 48    | 0.0108 |
| Male Reprod     | 453150  | 32/118    | 44    | 0.0097 |
| Germ Cells      | 46185   | 1/5       | 9     | 0.0195 |
| Hemic/Immune    | 701709  | 8/166     | 8     | 0.0011 |
| Liver           | 110945  | 2/34      | 2     | 0.0018 |
| Musculoskeletal | 162794  | 10/50     | 16    | 0.0098 |
| Nervous         | 973795  | 25/221    | 45    | 0.0046 |
| Pancreas        | 111757  | 3/25      | 19    | 0.0170 |
| Respiratory     | 407942  | 14/95     | 21    | 0.0051 |
| Sense Organs    | 25346   | 1/10      | 1     | 0.0039 |
| Skin            | 72110   | 1/15      | 1     | 0.0014 |
| Stomatognathic  | 14025   | 0/11      | 0     | 0.0000 |
| Unclass./Mixed  | 150146  | 6/19      | 31    | 0.0206 |
| Urinary Tract   | 287931  | 12/66     | 22    | 0.0076 |
| Totals          | 5491408 | 229/1375  | 404   | 0.0001 |

Legend: The first column presents the category (cell tissue or organ), the second column, the number of cDNAs sequenced for that category; the third column, description of the tissue; the fourth column, absolute abundance of the transcript; and the fifth column, percent abundance of the transcript (abundance divided by the number of clones)

**FIGURE 4**

### Differential Expression of SEQ ID NO:3 in Pancreas

Found in:

| <u>Library</u> | <u>cDNAs</u> | <u>Description</u>                   | <u>Abund</u> | <u>%Abund</u> |
|----------------|--------------|--------------------------------------|--------------|---------------|
| PANCTUP01      | 1205         | pancreatic tumor, TIGR               | 1            | 0.0830        |
| PANCTUP032     | 2651         | pancreas tumor, adenoCA, 3' CGAP     | 17           | 0.0751        |
| PANCTUT021     | 1545         | pancreatic tumor, anaplastic CA, 45F | 1            | 0.0087        |

Not found in:

| <u>Library</u> | <u>cDNAs</u> | <u>Description</u>                                       |
|----------------|--------------|--|
| PANCDIR02      | 2023         | pancreas, type I diabetes, 43F, RP                       |
| PANCDIT01      | 1741         | pancreas, type I diabetes, 15M                           |
| PANCN0T23      | 3919         | pancreas, type I diabetes, 43F                           |
| PANCDIT03      | 688          | pancreas, type II diabetes, 57M                          |
| PANCNOE02      | 2834         | pancreas, 8M, 5RP  |
| PANCNOP03      | 589          | pancreas, 34F, WN  |
| PANCNOP05      | 373          | pancreas, CGAP   |
| PANCN0T01      | 4452         | pancreas, 29M  |
| PANCN0T0411135 |              | pancreas, 5M   |
| PANCN0T05      | 6788         | pancreas, 2M   |
| PANCN0T07      | 6991         | pancreas, fetal, 23wM                                    |
| PANCN0T08      | 3901         | pancreas, pancreatitis, mw/adenoCA, 65F, m/PANCTUT01     |
| PANCN0T15      | 3638         | pancreas, islet cell hyperplasia, 15M                    |
| PANCN0T16      | 2994         | pancreas, aw/Patau's, fetal, 20wM                        |
| PANCN0T17      | 4034         | pancreas, mw/neuroendocrine CA, aw/node, liver mets, 65F |
| PANCN0T19      | 3772         | pancreas, 8M   |
| PANCN0T21      | 3841         | pancreas, 8M   |
| PANCN0T22      | 1356         | pancreas, 17F  |

Legend: The first range shows the expression of SEQ ID NO:3 in pancreas. SEQ ID NO:3 is differentially expressed in pancreatic tumors and diagnostic of that condition. The second range shows that the sequence is not expressed in type I and II diabetes, in pancreatitis, or in metastatic liver cancer.

Where present, the first column presents the library name, the second column, the number of cDNAs sequenced for that library; the third column, description of the tissue; the fourth column, absolute abundance of the transcript; and the fifth column, percent abundance of the transcript (abundance divided by the number of clones)

Note: Normalized and subtracted tissues, which have high abundance transcripts removed before sequencing, were not considered in this analysis.

**FIGURE 5**